

Application Number 10/525296
Response to the Office Action mailed March 2, 2009

REMARKS

Favorable reconsideration of this application is requested in view of the following remarks.

Applicants appreciate the Examiner's courtesy of having the telephone interview on May 27, 2009, and the following remarks reflect the discussion of the interview.

Claims 1 and 16 have been amended to include the limitations of previously presented claim 2. Accordingly, claim 2 has been canceled without prejudice. Applicants respectfully submit that the response herein does not raise new issues. Entry and consideration for the claim amendments and remarks are respectfully requested.

Claims 1-10 and 12-17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kitaura et al. (U.S. Patent Application Publication No. 2002/0122366) in view of Nishiuchi et al. (Japanese Journal of Applied Physics. 37 (1988) 2163). Applicants respectfully traverse this rejection.

Kitaura discloses an optical information recording medium that provides recording and reproducing characteristics (see abstract). Kitaura further discloses that the recording layer of the information recording medium contains Te, O, and M, in which an oxygen concentration is preferably 25-60% (see page 3, para. [0039]). However, the oxygen concentration disclosed by Kitaura is the overall oxygen content in all recording layers. In addition, Kitaura discloses only one actual composition of Te:O:Pd = 42:53:5 (see page 5, para. [0067], page 7, para. [0085]), and the same target ratio of Te:Pd of 90:10 among four recording layers having different thickness of 6-20 nm (see example 4 at page 8-9, paras. [0099]-[0102]).

However, Kitaura does not disclose that the oxygen concentrations in more than one recording layers vary in a manner that the recording layer included in the information layer provided nearer to a laser beam incidence side has a lower concentration of oxygen atoms as claim 1 recites.

Application Number 10/525296

Response to the Office Action mailed March 2, 2009

In addition, Kitaura does not disclose the relationship of the differences of refractive indexes and extinction coefficients between the two states of a recording layer relative to those of the other recording layer as expressed by the formula of " $|\Delta n_m| + |\Delta k_m| > |\Delta n_j| + |\Delta k_j|$ " in claim 1.

As Kitaura fails to disclose the relative oxygen atom concentration, which is lower in the recording layer nearer to a laser beam incidence side, and fails to disclose the particular characteristics of the refractive indexes and extinction coefficients and transparency of the recording layers recited in claim 1, there is no reasonable basis to assume that the recording layers in the medium of Kitaura would satisfy the relationships of " $|\Delta n_m| + |\Delta k_m| > |\Delta n_j| + |\Delta k_j|$ " and " $0 \leq |T_{Aj} - T_{Bj}| / (T_{Aj}, T_{Bj})_{\max} \leq 0.10$ " as claim 1 recites.

Nishiuchi fails to remedy the deficiencies of Kitaura. Nishiuchi discloses a recordable dual-layer optical disk including Te-O-Pd and the composition of $\text{Te}_{42}\text{O}_{46}\text{Pd}_{12}$ as an optimized one (see abstract and page 2164, left coln. last three lines in second para. under 3.1). Nishiuchi further discloses that it is practical to use the same composition for Layers 1 and 2 (see page 2164, first para.). Thus, like Kitaura, Nishiuchi fails to disclose the relative oxygen concentration among the recording layers, where the recording layer nearer to the laser beam incidence side has a lower concentration of oxygen atoms.

In addition, Nishiuchi fails to disclose the relationship of the differences of the refractive indexes and extinction coefficients between the two states relative to those of the other recording layer as expressed by the formula of " $|\Delta n_m| + |\Delta k_m| > |\Delta n_j| + |\Delta k_j|$ " in claim 1. Layer 1 of Nishiuchi, which has a thickness of 20 nm that is particularly selected in order to obtain large transmittance and equivalent reflectivity changes and absorbance to those of Layer 2 (see page 2164, right coln., first para. under 3.2), has $|T_{Aj} - T_{Bj}|$ of 0.25 (see table II on page 2165) and does not provide the transmissivity characteristic expressed by the formula of " $0 \leq |T_{Aj} - T_{Bj}| / (T_{Aj}, T_{Bj})_{\max} \leq 0.10$ " recited by claim 1.

Therefore, the recording layers of Nishiuchi are fundamentally different from those of claim 1, and there is no reasonable basis to assume that the recording layers of

Application Number 10/525296
Response to the Office Action mailed March 2, 2009

Nishiuchi satisfy the characteristics of " $|\Delta n_m| + |\Delta k_m| > |\Delta n_j| + |\Delta k_j|$ " and " $0 \leq |TA_j - TB_j| / (TA_j, TB_j)_{\max} \leq 0.10$ " as claim 1 recites.

Claim 16 is distinguished from Kitaura in view of Nishiuchi for at least the same reasons as discussed for claim 1 above.

Accordingly, claims 3-7, 10, and 12-15, which ultimately depend from claim 1, and claim 17, which depends from claim 16, also are distinguished from Kitaura in view of Nishiuchi for at least the same reasons as discussed above, and this rejection should be withdrawn.

Claim 11 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kitaura et al. (U.S. Patent Application Publication No. 2002/0122366) in view of Nishiuchi et al. (Japanese Journal of Applied Physics. 37 (1988) 2163) and further in view of Imaino et al. (U.S. Patent No. 5,555,537). Applicants respectfully traverse this rejection.

Claim 11, which depend from claim 1, is distinguished from Kitaura in view of Nishiuchi for at least the same reasons as discussed for claim 1 above.

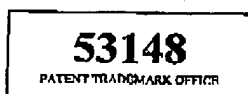
Imaino discloses recording layers that may include oxides such as TeO_x , GeO_x , SbO_x , and InO_x (see coln. 10, lines 27-30). However, the "x" is not clearly defined in Imaino, and thus Imaino fails to disclose that the recording layer nearer to the laser beam incidence side has a lower concentration of oxygen atoms as claim 11 recites.

In addition, Imaino fails to disclose that the recording layers have the characteristics expressed by the formula of " $0 \leq |TA_j - TB_j| / (TA_j, TB_j)_{\max} \leq 0.10$ " and " $|\Delta n_m| + |\Delta k_m| > |\Delta n_j| + |\Delta k_j|$ " of claim 11.

Accordingly, Imaino does not remedy the deficiencies of Kitaura and Nishiuchi, and this rejection should be withdrawn.

Application Number 10/525296
Response to the Office Action mailed March 2, 2009

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.



Dated: June 2, 2009

DPM/JAL/my/ad

Respectfully submitted,

HAMRE, SCHUMANN, MUELLER &
LARSON, P.C.
P.O. Box 2902
Minneapolis, MN 55402-0902
(612) 455-3800

By: _____

James A. Larson
James A. Larson
Reg. No. 40,443